



May 27, 2015

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Re: Strata Energy Ross In Situ Recovery Project
Source Materials License SUA-1601, Docket No. 040-09091
License Amendment Request – License Condition 11.3(D)

To Whom It May Concern:

Strata Energy, Inc. (Strata) is submitting this license amendment request to the U.S. Nuclear Regulatory Commission (NRC) to approve a change in the baseline water quality parameters referenced in License Condition 11.3(D), which states:

Sampling and Analyses. Four samples shall be collected from each well to establish background levels. The sampling events shall be at least 14 days apart. The samples shall be analyzed for parameters listed in Table 5.7-2 of the approved license application. The third and fourth sample events can be analyzed for a reduced list of parameters; the parameters that can be deleted from analysis are those below the minimum analytical detection limits (MDL) during the first and second sampling events provided the MDLs meet the data quality objectives for the sampling.

Strata desires to revise Table 5.7-2 of the approved license application to more closely reflect guidance issued by the NRC and/or Wyoming Department of Environmental Quality. Although revising this table will not change the reference in License Condition 11.3(D), NRC staff has determined that an amendment request is necessary. To support Strata's request, attached please find the following information:

- Completed Form 313, as required by 10 CFR 40 (Attachment 1)
- Requested changes to Table 5.7-2 (Attachment 2)

NM5501

Thank you for your consideration of this amendment request. If you have any questions, please contact me at (307) 686-4066 or mgriffin@stratawyo.com.

Sincerely,
Strata Energy, Inc.



Michael Griffin
Vice President of Permitting, Regulatory and Environmental Compliance

Cc: Mr. John Saxton, NRC Project Manager – **via email**

Attachment 1
NRC Form 313

(03-2014)
10 CFR 30, 32, 33, 34
35, 36, 37, 39, and 40



APPLICATION FOR MATERIALS LICENSE

Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. *AMENDMENTS/RENEWALS THAT INCREASE THE SCOPE OF THE EXISTING LICENSE TO A NEW OR HIGHER FEE CATEGORY WILL REQUIRE A FEE.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA,
KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY,
NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH
CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,

SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,
SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH
DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS,
UTAH, WASHINGTON, OR WYOMING,

SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

☐

A. NEW LICENSE

☒

B. AMENDMENT TO LICENSE NUMBER

SUA-1601

☐

C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)

Strata Energy, Inc.
1900 W. Warlow Dr., Bldg. A,
Gillette, Wyoming 82716

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

2929 New Haven Road
Oshoto, Wyoming 82721

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Michael Griffin

BUSINESS TELEPHONE NUMBER

(307) 686-4066

BUSINESS CELLULAR TELEPHONE NUMBER

BUSINESS EMAIL ADDRESS

mgriffin@stratawyo.com

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (Fees required only for new applications, with few exceptions*) (See 10 CFR 170 and Section 170.31)

FEE CATEGORY

AMOUNT
ENCLOSED \$

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 37, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE

Michael Griffin, Vice President

SIGNATURE

DATE

5/27/15

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

ROSS URANIUM PROJECT SUA-1601 SOURCE MATERIALS LICENSE AMENDMENT REQUEST

NRC Form 313 Attachment

Items 5 Through 11

Applicant

Strata Energy, Inc.

1900 W. Warlow Dr., Bldg. A,

Gillette, Wyoming 82716

5. Radioactive Material:

a) Element and Mass Number:

Uranium- Unat (U238, U234, and U235)

b) Chemical and/or Physical Form:

Chemical form is U308

Solution of 0 to 50 grams/liter

Dried Yellowcake- 50% to 80% U

c) Maximum Amount which will be possessed at any one time:

Unlimited

6. PURPOSE FOR WHICH LICENSED MATERIAL WILL BE USED:

Fuel for electricity generation from nuclear power plants.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE:

Individual: Michael Griffin

Training: 31 years as Radiation Safety Officer experience including Uranium Mill Tailings Remedial Action (UMTRA) Project; Title II conventional uranium mill decommissioning projects; Manager of Health, Safety and Environment Affairs for Cameco Resources (Crow Butte Mine (SUA-1534) 1998-2006); Vice President of Safety, Health, and Environment for Uranium One (Willow Creek Uranium Project (SUA-1341) 2007 to 2012); Vice President of Permitting, Regulatory and Environmental Compliance for Strata Energy, Inc. (2012 to Present).

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS:

This information is provided in detail in Section 5 of the approved License Application and supplemental submissions.

9. FACILITIES AND EQUIPMENT:

This information is provided in detail in Section 3 of the approved License Application and supplemental submissions.

10. RADIATION SAFETY PROGRAM:

This information is provided in detail in Section 5 of the approved License Application and supplemental submissions.

11. WASTE MANAGEMENT:

This information is provided in detail in Section 4 of the approved License Application and supplemental submissions.

Attachment 2
Requested Changes to Table 5.7-2

Strata request approval to revise the baseline water quality parameters contained in Table 5.7-2 of the approved License Application. The reason for this revision is that a number of parameters contained in the current list are not recommended in the relevant NRC or WDEQ guidance. Table 5.7-2 "Wellfield Baseline Aqueous Sampling Parameter List" is not consistent with Table 2.7.3-1 of NUREG-1569 or Reference Document 10, Table 2 of WDEQ Guideline 4- In situ Mining. The table contains several water quality parameters that are not recommended in the relevant guidance and that are difficult to sample and/or measure. Additionally it is not clear from the table whether some of the parameters should be measured as "total", "dissolved" or "suspended" concentrations. These additional parameters are not needed to effectively establish baseline groundwater quality conditions for determination of restoration standards or upper control limits and are not used at other NRC licensed and/or operating ISR facilities.

Table 1 Comparison of Table 5.7-2 with Other NRC Licenses and Guidance (attached) includes the list of parameters currently contained in Table 5.7-2. It also contains columns that reflect the parameters contained in NUREG-1569, WDEQ-LQD Guidelines 4 and 8, and the NRC licenses issued to Ur Energy, Uranerz, and Cameco. "X" indicates a parameter that is contained in the relevant list. "XD" indicates a dissolved parameter. Where it is unclear whether a parameter is dissolved or total that is also noted.

The parameters that Strata proposes to delete from Table 5.7-2 include:

Field Parameters

Turbidity

Oxidation-Reduction Potential (ORP)

Dissolved Oxygen

Metals

Iron, total

Manganese, total

Uranium, suspended

Radiological

Lead 210, dissolved

Lead 210, suspended

Polonium 210, dissolved

Polonium 210, suspended

Ra-226, suspended

Radon-222

Th-230, dissolved

Th-230, suspended

In addition during review of current WDEQ guidance Strata determined that silica (Si) is recommended for inclusion of the major ions for analysis. Therefore silica (dissolved) was added to the proposed revisions to Table 5.7-2. A revised Table 5.7-2 is attached. Strata has recently (May 18, 2015) received approval of a parallel request for a Non-Significant Revision to our Permit to Mine issued by the WDEQ-LQD.

Table 1 Comparison of Existing Table 5.7-2 with Other NRC Licenses and Guidance

ROSS	URE	URZ	Cameco	NUREG 1569	LQD GL No.8 Jan 2014	LQD GL No.4 Table 2 FEB 6 2014
Field						
Field conductivity	X	X				
Field pH	X	X				X
Field turbidity						
Depth to water Ft						
Temperature Deg C	X	X				
ORP						
Dissolved oxygen						
General						
Alkalinity	X	X	X	X		X
Ammonia	X	X	X		X	X
Fluoride	X	X	X	X	X	X
Laboratory conductivity		X	X	X		X
Laboratory pH		X	X	X		X
Nitrate						X
Nitrate+nitrite	X	X	X	X	X	X
Total dissolved solids	X	X	X	X	X	X
SAR						X
Major Ions						
Calcium	XD	X	XD	X	XD	XD
Magnesium	XD	X	XD	X	XD	XD
Potassium	XD	X	XD	X	XD	XD
Sodium	XD	X	XD	X	XD	XD
Bicarbonate	X	X			X	X
Carbonate	X	X	X	X	X	X
Chloride	XD	X	XD	X	XD	X
Sulfate	X	X	X	X	X	X

Table 1 Comparison of Existing Table 5.7-2 with Other NRC Licenses and Guidance (continued)

						LQD GL No.4 Table 2
ROSS	URE	URZ	Cameco	NUREG 1569	LQD GL No.8 Jan 2014	FEB 6 2014
Metals						
Aluminum, dissolved	XD	XD				XD
Arsenic, dissolved	XD	XD	XD	X	XD	XD
Barium, dissolved	XD	XD		X		XD
Boron, dissolved	X	XD	X	X	X	XD
Cadmium, dissolved	XD	XD	XD	X	XD	XD
Chromium, dissolved	XD	XD	XD	X	XD	XD
Copper, dissolved	XD	XD	XD	X		XD
Iron, dissolved	XD	?	XD	X Diss or tot?	XD	XD
Iron, total	XT	XD	XD		X	
Lead, dissolved	XD	XD		X		XD
Manganese, total	X	XT	XT	X	X	XD
Mercury mg	XD	XD		X		XD
Molybdenum, dissolved	XD	XD	XD	X	XD	XD
Nickel, dissolved	XD	XD		X		XD
Selenium, dissolved	XD	XD	XD	X	XD	XD
Silver, dissolved				X		
Uranium, dissolved	XD	XD		X	X	XT
Uranium, suspended			X Diss or tot?	X Diss or tot?	X Diss or tot?	
Vanadium, dissolved	X		X Diss or tot?	X	X Diss or tot?	XD
Zinc, dissolved	XD	XD	XD	X	XD	XD
Radiological						
Lead 210, dissolved						
Lead 210, suspended						
Polonium 210, dissolved						
Polonium 210, suspended						
Ra-226, dissolved		XD	X Diss or tot?	X Diss or tot?	X Diss or tot?	X Diss or tot?
Ra-226, suspended						
Ra-228, dissolved		XD	X Diss or tot?		X Diss or tot?	X Diss or tot?
Radon-222						
Th-230, dissolved						
Th-230, suspended						
Gross alpha	X	X	X	X	X	X
Gross beta	X	X	X	X	X	
Ra-226+228	X					
silica (to be added)		X				XD

Table 5.7-2. Wellfield Baseline Aqueous Sampling Parameter List

Parameter	Units
Field	
Field conductivity	µmhos/cm
Field pH	s.u.
Depth to water	ft
Temperature	Deg C
General	
Alkalinity (as CaCO ₃)	mg/L
Ammonia	mg/L
Fluoride	mg/L
Silica, dissolved	mg/L
Laboratory conductivity	µmhos/cm
Laboratory pH	s.u.
Nitrate/nitrite	mg/L
Total dissolved solids	mg/L
Major Ions	
Calcium	mg/L
Magnesium	mg/L
Potassium	mg/L
Sodium	mg/L
Bicarbonate	mg/L
Carbonate	mg/L
Chloride	mg/L
Sulfate	mg/L
Metals	
Aluminum, dissolved	mg/L
Arsenic, dissolved	mg/L
Barium, dissolved	mg/L
Boron, dissolved	mg/L
Cadmium, dissolved	mg/L
Chromium, dissolved	mg/L
Copper, dissolved	mg/L
Iron, dissolved	mg/L
Lead, dissolved	mg/L
Manganese, dissolved	mg/L
Mercury, dissolved	mg/L
Molybdenum, dissolved	mg/L
Nickel, dissolved	mg/L
Selenium, dissolved	mg/L
Silica, dissolved	mg/L
Silver, dissolved	mg/L
Uranium, dissolved	mg/L
Vanadium, dissolved	mg/L
Zinc, dissolved	mg/L
Radiological	
Ra-226, dissolved	pCi/L
Ra-228, dissolved	pCi/L
Gross alpha	pCi/L
Gross beta	pCi/L